Applicants Response to Examiner's Comments

Election/Restrictions

Examiner believes that newly submitted claims 4-12 are directed to an invention that is independent or distinct from the invention originally claimed for the following reasons: Claim 1 does not require the "means to move the bottom structure and top structure" required in claims 4-12, while claims 4-12 do not require the metallic bottom structure or indentations required in claim 1. Examiner holds that since Applicant has received an action on the merits for the originally presented invention, this invention has been constructively elected by original presentation for prosecution on the merits. Accordingly, Examiner further holds that Claims 4-12 are withdrawn from consideration as being directed to a non-elected invention. See 37 CFR 1.142(b) and MPEP § 821.03.

Applicant replies that in the interest of an expeditious prosecution, Claims 4 through 12 are withdrawn without prejudice, and further that new Claims 13 through 18 all depend from independent Claim 1.

Claim Rejections - 35 USC § 112

Examiner rejects Claim 1 under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. Examiner believes the Claim 1 contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the Application was filed, had possession of the claimed invention. Examiner states there is no teaching of the optical devices being positioned over the indentation "at a distance no greater than 20 millimeters" in the specification as

originally filed. Examiner states that there is no mention of such 20 millimeter spacing, as an upper range limit or otherwise, anywhere in the original specification.

Applicant has deleted the limitation of positioning features "at a distance no greater than 20 millimeters" from the Claim 1, and therefore respectfully submits that Examiner's rejection of the Claims under 35 U.S.C. 112, first paragraph, are traversed.

Applicant has added a limitation to Claim 1 that teaches that the rigid top structure which includes multiple optical "presents a pathway toward the plurality of indentations of no greater than approximately 10 millimeters through which the sunlight passes". Applicant notes that this limitation of length of the pathway is supported in the Application in Paragraphs 0055, 0056, 0058, 0059-0064, 0077, 0078, 0082, 0089, 0092and 0093; and elements 4 and 6 as presented in Figures 1, 2, 3, 4 and 8.

Applicant respectfully submits that Claims 1 and 13 through 18 as currently amended are allowable.

Claim Rejections - 35 USC § 103

Examiner believes the Application currently names joint inventors. The examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary in considering patentability of the claims under 35 U.S.C. 103(a). Examiner requests Applicant be advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Applicant responds that the Application properly attests that the named inventor Roger Stewart is the sole inventor. Applicant further respectfully responds that Examiner's belief that the Application has no basis in the record of the Application. Applicant respectfully suggests that the Examiner's comments regarding joint ownership were caused by a clerical error in the preparation of the Office Action mailed on December 17, 2009.

Examiner rejects Claim 1 under 35 U.S.C. 103(a) as being unpatentable over Fraas et al. Examiner thinks Fraas et al disclose a photovoltaic device for concentrating sunlight onto multiple photovoltaic cells (Figures 1 and 3) comprising: a metallic bottom structure (46) with a multiplicity of indentations (47) that each contain a photovoltaic cell (42) (Column 6, lines 22-35); a rigid transparent top structure (Unitary structure of Fresnel lenses disclosed; Column 2, lines 52-60) containing multiple optical devices (i.e. each Fresnel lens in Figure 1 is a separate device), the top structure being aligned to the bottom layer such that the optical devices are positioned as claimed (Column 2, lines 46-61), wherein the optical devices concentrate incident sunlight towards the cells (Column 2, lines 46-61), and wherein the rigid top structure provides enough mechanical strength, rigidity, and stability to permit the photovoltaic device to be positioned. (Abstract; the devices are positioned as required in the claim, therefore the claimed strength, rigidity, and stability are present) Examiner admits Fraas et al do not explicitly disclose the distance between the lenses and indentations. Examiner believes that, it would have been obvious to one having ordinary skill in the art at the time the invention was made to select any suitable distance between the indentations and lenses, such as a spacing of 20 mm or less, depending on the desired degree of concentration, size of the available cells, size and focal length of available lenses, etc. In the absence of evidence of criticality, such selection of suitable dimensions for the device is considered to be a matter of design choice, obvious to one having

ordinary skill in the art. Note that in Gardner v. TEe Systems, Inc., 725 F.2d 1338,220 USPQ 777 (Fed. Cir. 1984), cert. denied, 469 U.S. 830, 225 USPQ 232 (1984), the Federal Circuit held that, where the only difference between the prior art and the claims was a recitation of relative dimensions of the claimed device and a device having the claimed relative dimensions would not perform differently than the prior art device, the claimed device was not patentably distinct from the prior art device. There is no evidence that the claimed device performs significantly differently that that taught by the prior art.

Applicant respectfully responds that, as currently amended, Claim 1 teaches, "the rigid top structure is bonded to the metallic bottom structure to form a hermetically sealed and solid structure without significant gaps or voids".

Applicant notes that the newly added limitation of Claim 1of hermetic sealing is supported by Paragraphs 0013, 0062, 0063, 0078, 0089, 0092 and 0101 of the Application.

Additionally, and as noted above, Applicant has added a limitation to Claim 1 that teaches that the rigid top structure which includes multiple optical "presents a pathway toward the plurality of indentations of no greater than approximately 10 millimeters through which the sunlight passes". Applicant notes that this limitation of length of the pathway is supported in the Application in Paragraphs 0055, 0056, 0058, 0059-0064, 0077, 0078, 0082, 0089, 0092and 0093; and elements 4 and 6 as presented in Figures 1, 2, 3, 4 and 8.

Applicant further responds that Fraas fails wholly to disclose or provide a device or feature that hermetically seals the top and bottom portions of the structure together in order to prevent contaminants intrusion which could potentially lower efficiency while providing a pathway for sunlight through the top structure of less than approximately 10 millimeters.

Applicant respectfully submits that Claim 1 as currently amended is allowable, and that Claims 13 through 18 depend from Claim 1 and are therefore allowable.

Examiner rejects Claim 1 under 35 U.S.C. 103(a) as being unpatentable over Stark. (US 4,323,052) Examiner believes Stark discloses a photovoltaic device for concentrating sunlight onto multiple photovoltaic cells (Figure 3) comprising: a metallic bottom structure (28) with a multiplicity of indentations (30) a plurality of which contain photovoltaic cells (59) (Column 13, lines 45-47; Column 14, lines 54-64); a rigid transparent top structure (e.g. 32, 12a, 12b) containing multiple optical devices (12a, 12b), the top layer being aligned to the bottom layer such that the optical devices are positioned as claimed (Column 14, lines 54-62), wherein the optical devices concentrate incident sunlight towards the cells (Figure 3; Column 14, lines 54-58), and wherein the rigid top structure provides enough mechanical strength, rigidity, and stability to permit the photovoltaic device to be positioned. (Abstract; the devices are positioned as required in the claim, therefore the claimed strength, rigidity, and stability are present) Examiner admits Stark does not explicitly disclose a distance between the lenses and indentations of 20 mm or less. Examiner believes that, it would have been obvious to one having ordinary skill in the art at the time the invention was made to select any suitable distance between the indentations and lenses, such as a spacing of 20 mm or less, depending on the desired degree of concentration, size of the available cells, size and focal length of available lenses, etc. Examiner makes the conclusion, in the absence of evidence of criticality, such selection of suitable dimensions for the device is considered to be a matter of design choice, obvious to one having ordinary skill in the art. Examiner requests Applicant to note that in Gardner v. TEe Systems, Inc., 725 F.2d 1338,220 USPQ 777 (Fed. Cir. 1984), cert. denied, 469 U.S. 830, 225 USPQ 232 (1984), the Federal Circuit held that, where the only difference

between the prior art and the claims was a recitation of relative dimensions of the claimed device and a device having the claimed relative dimensions would not perform differently than the prior art device, the claimed device was not patentably distinct from the prior art device. Examiner is under the impression there is no evidence that the claimed device performs significantly differently that that taught by the prior art.

Applicant respectfully notes, as currently amended, Claim 1 teaches, "the rigid top structure is bonded to the metallic bottom structure to form a hermetically sealed and solid structure without significant gaps or voids".

Applicant notes that the newly added limitation of Claim 1of hermetic sealing is supported by Paragraphs 0013, 0062, 0063, 0078, 0089, 0092 and 0101 of the Application.

Additionally, and as noted above, Applicant has added a limitation to Claim 1 that teaches that the rigid top structure which includes multiple optical "presents a pathway toward the plurality of indentations of no greater than approximately 10 millimeters through which the sunlight passes". Applicant notes that this limitation of length of the pathway is supported in the Application in Paragraphs 0055, 0056, 0058, 0059-0064, 0077, 0078, 0082, 0089, 0092and 0093; and elements 4 and 6 as presented in Figures 1, 2, 3, 4 and 8.

Applicant further responds that Stark fails wholly to disclose or provide a device or feature that hermetically seals the top and bottom portions of the structure together in order to prevent contaminants intrusion which could potentially lower efficiency while providing a pathway for sunlight through the top structure of less than approximately 10 millimeters.

Applicant respectfully submits that Claim 1 as currently amended is allowable, and that Claims 13 through 18 depend from Claim 1 and are therefore allowable.

New Claims

Applicant submits new Claims 13 through 18 herein. Applicant notes that Claims 13 and 18 depend from independent Claim 1.

Applicant notes that element of optical lenses of Claim 13 is supported by Paragraphs 0021-0024, 0055 and 0060 of the Application.

Applicant notes that limitation of Claim 14 of the magnitude of focus of a lens of 200 microns is supported by Paragraphs 0069, 0096, 0098, and 100 through 113 of the Application.

Applicant notes that the element of Claim 15 of concentrating solar energy into separate photovoltaic cells is supported by paragraphs 0086, 0090 and 106 through 110 of the Application.

Applicant notes that the temperature uniformity limitation of Claim 16 is supported by Paragraphs 0070 and 0100 of the Application.

Applicant notes that the reduction of recombination of hole-electron pairs of Claim 17 is supported by Paragraphs 0065, 0071 through 0074, 0081 through 0088, and 0116 of the Application.

Applicant notes that the power dissipation limitation of Claim 18 is supported by Paragraph 0099 of the Application.

Applicant respectfully submits that Claims 13 through 18 are not anticipated by either Fraas et al. nor by Stark, and that Claims 2 and 3 are therefore allowable.

Allowability of the Claims

Applicant respectfully submits that the Claims 1 and 13 through 18 as currently amended are allowable.

If any matters can be resolved by telephone, Applicant requests that the Patent and Trademark Office call the Applicant at the telephone number listed below.

Respectfully submitted,

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